UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,563	10/18/2001	Shigeru Kitsutaka	110713	2263

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EXAMINER
CUNNINGHAM, GREGORY F

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/937,563	KITSUTAKA, SHIGERU
Office Action Summary	Examiner	Art Unit
	Greg Cunningham	2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 November 2004</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,19-26,37-44 and 55-60* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,19-26,37-44 and 55-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications of application filed 11/05/2004.

2.   The disposition of the claims is as follows: claims 1-8, 19-26, 37-44 and 55-60 are

pending in the application. Claims 1, 19 and 37 are independent claims.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

4.   Claims 1, 19 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being

incomplete for omitting essential structural cooperative relationships of elements, such omission

amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The

omitted structural cooperative relationships are:

A.   The cooperating structural distinction relationships between the index number

setting section and the drawing section are missing or ambiguous. It appears as though both

sections use the same index number setting from original image information and the same index

lookup table. However, the index number setting section performs only <u>texture-mapping</u> onto an

<u>object</u>, whereas the drawing section performs <u>index color texture-mapping</u> onto a <u>virtual object</u>.

B.   It is also unclear as to how texture linking is performed and at what items are

being linked together; the texture in the lookup table, the texture before its mapped onto an

object or virtual object, or the texture after its mapped onto an object or virtual object.

C.   Is the object being texture-mapped the same as the virtual object being index

color texture-mapped?

D.   Are both objects being texture-mapped or index color texture-mapped?

E.   Drawing section never actual draws, but rather just transforms. Is this really just a

displaying operation?

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   In view of the examiner's best understanding of the claims as presented, claims 1, 2, 19,

20, 37, 38 and 55-60 are rejected under 35 U.S.C. 102(b) as being disclosed by Bollman, (US

Patent 5,218,350), and further in view of Udea, (US Patent 4,935,879).

A.   Claim 1, "A game system which generates an image, comprising:

a memory which stores a program and data for image generation [col. 3, lns. 13-15; col. 3, lns.

52-66 and col. 4, lns. 39-43]; and

at least one processor which is connected to the memory and performs processing for image

generation, at least one processor including [col. 3, lns. 52-66]:

an index number setting section which sets image information of an original image as an index

number in a lookup table for index color texture-mapping [col. 4, lns. 4-38], the index color

texture-mapping being texture-mapping which maps a texture onto an object while referring to

the lookup table, the index number being set to each texel of the texture in a texture space, and

the texture linking to image information to be texture-mapped; and a drawing section which

transforms the image information of the original image by performing index color texture-

mapping on a virtual object by using the lookup table in which the image information of the

original image is set as the index number [col. 4, lns. 4-38]" is disclosed [as detailed by

Bollman]. Wherein [an image originally defined in 24 bit color, is reduced to a predetermined

number of colors (a color set), between 27 and 128 in number, each color indexed in an 8 bit

look up table, so that each pixel is color identified with a index pointer to a color or appearance

characteristic in the look up table] corresponds to "index number setting section" and [These

values are then converted to chrominance/luminance space in a known chrominance/luminance

transform at step 30. The position of the color set may then be varied through

luminance/chrominance space to derive a new color image, with the actual rotation equations

only applied to the reduced color set. Upon achieving the desired image appearance, the

luminance/chrominance rotation selected is applied to the original 24 bit image, and a new

reduced RGB color set is derived.] corresponds to "a drawing section which ...". However

Bollman's lack of texture assigning is disclosed by Ueda in col. 9, lns. 29-38 at "A color look-up

table memory 10 is provided and 2D source coordinates data for texture mapping data are

assigned therein.

In accordance with the fifth embodiment, the contents of the color look-up table memory 10

can be read out based on the 2D source coordinates data for texture mapping data uj, vj. This

enables execution of shading processing according to the color index method so that an edge

display can be made at the boundary of a figure on which an animation image is to be mapped."

Wherein 'texture assigning' corresponds to "texture setting" and wherein assigning is inherently from original image data albeit original video image data. Udea also reveals in col. 1, lns. 18-24 at "There is known a texture mapping apparatus in which a 2D texture original figure is divided into line segments in the scan line direction, and the line segments thus obtained are subjected to an inverse perspective transformation for each pixel while the line segments are being scanned on the display plane in the scan line direction" which corresponds with "transforms the image information of the original image by performing index color texture-mapping on a virtual object by using the lookup table".

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply indexing disclosed by Bollman in combination with texture indexing and assigning disclosed by Ueda, and motivated to combine the teachings because it would provide a texture mapping apparatus and method capable of executing shading processing according to the color index method together with texture mapping processing as revealed by Uade in col. 3, lines 9-13.

(Examiner's note: "game system" of claim 1 carries no patentable weight.)

B.   Per independent claims 19 and 37, these are directed to a computer usable program and a method, respectively, for the system of independent claim 1, and therefore are rejected to independent claim 1.

C.   Claim 2, "The game system as defined in claim 1, wherein the virtual object is a polygon having a size equal to a size of a display screen" is disclosed, supra for claim 1. However Bollman does not seem to disclose "wherein the virtual object is a polygon having a size equal to a size of a display screen", Udea does in Fig. 7 as shown.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply indexing as disclosed by Bollman in combination with polygons disclosed by Udea, and motivated to combine the teachings because it would "provide a texture mapping apparatus and method capable of executing shading processing according to the color index method together with texture mapping processing" as revealed by Udea in col. 3, lines 10-13.

D.   Per dependent claims 20 and 38, these are directed to a computer usable program and a method, respectively, for the system of dependent claim 2, and therefore are rejected to dependent claim 2.

E.   Claim 55, "The game system as defined in claim 1, wherein the image information of the original image set as index number is perspective-transformed information" is disclosed, supra for claim 1. However Bollman does not seem to disclose "wherein the image information of the original image set as index number is perspective-transformed information", but Ueda does in col. 1, lns. 18-24.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply indexing disclosed by Bollman in combination with perspective information disclosed by Ueda, and motivated to combine the teachings because it would provide a texture mapping apparatus and method capable of executing shading processing according to the color index method together with texture mapping processing as revealed by Ueda in col. 3, lines 9-13.

F.   Claim 58, "The game system as defined in claim 1, wherein the image information of the original image set as index number is at least one of color information, alpha value information,

and depth value information" is disclosed, supra for claim 1. Although Bollman discloses "the

original image set as index number is at least one of color information" in col. 3, ln. 67 – col. 4,

ln. 38, Bollman does not seem to disclose "wherein the image information of depth value

information", but Ueda does in col. 3, lns. 9-13; and col. 4, lns. 24-31.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply color information disclosed by Bollman in combination with depth

information disclosed by Ueda, and motivated to combine the teachings because it would provide

a texture mapping apparatus and method capable of executing shading processing according to

the color index method together with texture mapping processing as revealed by Ueda in col. 3,

lines 9-13.

G.   Per dependent claims 56, 59 and 57, 60, these are directed to a computer usable program

and a method, respectively, for the system of dependent claims 55 and 58, and therefore are

rejected to dependent claims 55 and 58.

7.   Claims 3, 21 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Bollman and Ueda as applied to claims 1, 27 and 45 above, and further in view of Regan, (US-

PAT-NO 6,611,264).

A.   Claim 3, "The game system as defined in claim 1, wherein the virtual object is a polygon

having a size equal to a size of a block obtained by dividing a display screen into blocks" is

disclosed supra for claim 1. However Bollman and Ueda do not appear to disclose "wherein the

virtual object is a polygon having a size equal to a size of a block obtained by dividing a display

screen into blocks", but Regan does in col. 1, lns. 40-51.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply texture mapping disclosed by Bollman and Ueda in combination

with triangular polygon blocks disclosed by Regan, and motivated to combine the teachings

because they are frequently used as building blocks as revealed in col. 1, line 40.

B.   Per dependent claims 21 and 39, these are directed to a computer usable program and a

method, respectively, for the system of dependent claim 3, and therefore are rejected to

dependent claim 3.

8.   Claims 4, 5, 8, 22, 23, 26, 40, 41 and 44 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bollman and Ueda as applied to claims 1, 27 and 45 above, and further in

view of Duluk, Jr. et al., (US-PAT-NO 6,597,363B1), hereafter Duluk.

A.   Claim 4, "The game system as defined in claim 1, wherein the lookup table is used to

perform gamma correction, negative/positive inversion, posterization, solarization, binarization

monotone filtering or sepia filtering on the image information of the original image" is disclosed

by Ueda supra for claim 1. However Bollman and Ueda do not appear to disclose "wherein the

lookup table is used to perform gamma correction, negative/positive inversion, posterization,

solarization, binarization monotone filtering or sepia filtering on the image information of the

original image", but Duluk does in col. 113, lns. 46-51.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply texture mapping disclosed by Bollman and Ueda in combination

with gamma correction disclosed by Duluk, and motivated to combine the teachings because the

look-up RAM act as look-up table for gamma correction as revealed by Duluk.

B.   Per dependent claims 22 and 40, these are directed to a computer usable program and a method, respectively, for the system of dependent claim 4, and therefore are rejected to dependent claim 4.

C.   Claim 5, "The game system as defined in claim 1, wherein one of color components of color information in the image information of the original image is set as the index number in the lookup table for the transformation of the color information; and wherein the game system further comprises means which performs masking on other color components of the transformed color information to avoid being drawn in the drawing region" is disclosed supra for claim 1. However Bollman and Ueda do not appear to disclose "wherein one of color components of color information in the image information of the original image is set as the index number in the lookup table for the transformation of the color information; and wherein the game system further comprises means which performs masking on other color components of the transformed color information to avoid being drawn in the drawing region", but Duluk does in col. 4, lns. 18-34.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply texture mapping disclosed by Bollman and Ueda in combination with depth using Z-buffering and LUT disclosed by Duluk, and motivated to combine the teachings because the look-up RAM act as look-up table for Z-buffering as revealed by Duluk.

D.   Per dependent claims 23 and 41, these are directed to a computer usable program and a method, respectively, for the system of dependent claim 5, and therefore are rejected to dependent claim 5.

E.   Claim 8, "The game system as defined in claim 1, wherein a depth value in the image

information of the original image is set as the index number in the lookup table" is disclosed

supra by Ueda and Duluk for claim 5.

F.   Per dependent claims 26 and 44, these are directed to a computer usable program and a

method, respectively, for the system of dependent claim 8, and therefore are rejected to

dependent claim 8.

9.   Claims 6, 7, 24, 25, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Bollman and Ueda as applied to claims 1, 27 and 45 above, and further in view of Schilling

et al., (US-PAT-NO 6,236,405B1), hereafter Schilling.

A.   Claim 6, "The game system as defined in claim 1, further comprising means which

blends: transformed color information obtained by setting the K-th color component of the color

information in the image information of the original image as the index number in the lookup

table; transformed color information obtained by setting the L-th color component of the color

information as the index number in the lookup table; and transformed color information

obtained by setting the M-th color component of the color information as the index number in the

lookup table" is disclosed supra for claim 1. However Bollman and Ueda do not appear to

disclose "further comprising means which blends: transformed color information obtained by

setting the K-th color component of the color information in the image information of the

original image as the index number in the lookup table; transformed color information obtained

by setting the L-th color component of the color information as the index number in the lookup

table; and transformed color information obtained by setting the M-th color component of the

color information as the index number in the lookup table", but Schilling does in col. 10, ln. 11 – col. 11, ln. 18. Wherein RGB corresponds to K, L and Mth components.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply texture mapping disclosed by Bollman and Ueda in combination with color information transformation via color look-up-table disclosed by Schilling, and motivated to combine the teachings because the color look-up-table via indices for R, G, B and α as revealed by Schilling.

B.   Claim 7, "The game system as defined in claim 1, wherein an alpha value corresponding to the image information of the original image is generated by the transformation of the image information of the original image" is disclosed supra for claim 6.

C.   Per dependent claims 24, 25, 42 and 43, these are directed to a computer usable program and a method, respectively, for the system of dependent claims 6 and 7, respectively, and therefore are rejected to dependent claims 6 and 7.

Response to Arguments

10.   Applicant's arguments with respect to claim 1-8, 19-26, 37-44 and 55-60 have been considered but are moot in view of the new ground(s) of rejection.

Responses

11.   Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231. If applicant desires to fax a response, (703) 872-9306 may be used for formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA., Sixth Floor (Receptionist).

Inquiries

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Greg Cunningham whose telephone number is (703) 308-6109.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose telephone

number is (703) 306-0377.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

gfc

February 10, 2005